Inspection Report For Well: UT20736 - 07120

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466
This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: 10/12/2013
Others: Ajayi, Christopher — Time: 12:46 am / (pm)

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 28-11		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 6/27/2007		
Oil Field:	Antelope Creek (Duchesne)		
Location:	NESW S28 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1745 /
Last MIT:	Pass 5/16/2012	***Annulus Pressure From Last MIT:***	1045

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
☐ Construction / Workover ☐ Response to Complaint ☐ Other
☐ Plugging ☒ Routine
☐ Post-Closure ☐ Witness MIT

ICIS Entered
Date 12/27/13
Initials JB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure:	U: 1652 / L: ____ psig	Gauge Owner:	☐ EPA ☒ Operator
		Gauge Range:	Scada psig		
Annulus Gauge:	☒ Yes ☐ No	Pressure:	0 psig	Gauge Owner:	☒ EPA ☐ Operator
		Gauge Range:	opened psig		
Bradenhead Gauge:	☐ Yes ☐ No	Pressure:	____ psig	Gauge Owner:	☐ EPA ☐ Operator
		Gauge Range:	____ psig		
Pump Gauge:	☐ Yes ☐ No	Pressure:	____ psig	Gauge Owner:	☐ EPA ☐ Operator
		Gauge Range:	____ psig		

Operating Status: (Select One)
☒ Active ☐ Not Injecting ☐ Plugged and Abandoned
☐ Being Reworked ☐ Production ☐ Under Construction

EEN	BLUE	CBI
	1	

See page 2 for photos, comments, and site conditions.

U2 Entered
Date 12/17/13
Initial JB

Inspection Report For Well: UT20736 - 07120 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

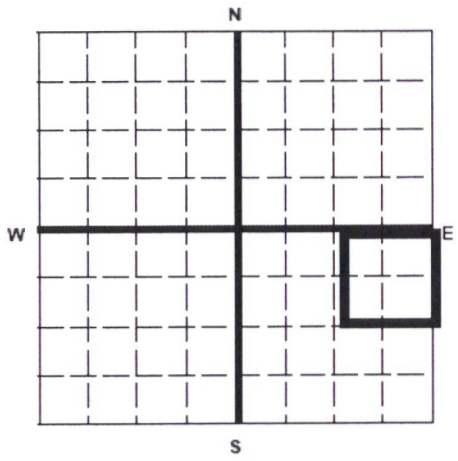
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07120

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2171 ft. frm (N/S) S Line of quarter section
and 2107 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1645	1670	1364		0	0
February	16	1659	1687	1376		0	0
March	16	1666	1697	1529		0	0
April	16	1644	1688	1445		0	0
May	16	1613	1707	1380		0	0
June	16	1668	1702	1607		0	0
July	16	1639	1687	1767		0	0
August	16	1680	1692	1710		0	0
September	16	1652	1677	1637		0	0
October	16	1666	1679	1891		0	0
November	16	1610	1645	1752		0	0
December	16	1663	1682	1995		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

GREEN BLUE CBI FA 2

U2 Entered
Date 4/5/17
Initial DD

EPA Form 7520-11 (Rev. 12-11)

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Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 28-11 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345319**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/26/2017**
System Temperature 1 (°F):	**300**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**130**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**0.9984**
pH:	**7.60**
Calculated TDS (mg/L):	**1708.05**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**50.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**5.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**441.38**	Chloride (Cl):	**336.00**
Potassium (K):	**4.27**	Sulfate (SO_4):	**110.00**
Magnesium (Mg):	**24.16**	Bicarbonate (HCO_3):	**732.00**
Calcium (Ca):	**44.62**	Carbonate (CO_3):	
Strontium (Sr):	**0.98**	Hydroxide(HO):	
Barium (Ba):	**1.65**	Acetic Acid (CH_3COO)	
Iron (Fe):	**4.51**	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	**1.00**	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	**0.00**	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	**0.08**	Bromine (Br):	
Aluminum (Al):	**0.00**	Silica (SiO_2):	**7.40**
Lithium (Li):	**2.69**	Calcium Carbonate ($CaCO_3$):	
Boron (B):	**0.66**	Phosphates (PO_4):	**1.59**
Silicon (Si):	**3.46**	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.73	22.11	1.09	0.90	2.74	2.48	1.78	3.22	0.00	0.00	0.00	0.00	0.00	0.00	9.75	0.52
149.00	267.00	0.81	24.06	1.00	0.88	2.71	2.47	1.90	3.23	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.52
168.00	483.00	0.93	26.87	0.93	0.87	2.74	2.48	2.04	3.25	0.00	0.00	0.00	0.00	0.00	0.00	9.36	0.52
187.00	700.00	1.06	29.49	0.88	0.85	2.80	2.48	2.19	3.26	0.00	0.00	0.00	0.00	0.00	0.00	9.22	0.52
206.00	917.00	1.20	31.79	0.85	0.84	2.88	2.48	2.34	3.26	0.00	0.00	0.00	0.00	0.00	0.00	9.11	0.52
224.00	1133.00	1.35	33.72	0.83	0.84	2.97	2.48	2.47	3.27	0.00	0.00	0.00	0.00	0.00	0.00	9.02	0.52
243.00	1350.00	1.51	35.25	0.83	0.83	3.08	2.48	2.61	3.27	0.00	0.00	0.00	0.00	0.00	0.00	8.95	0.52
262.00	1567.00	1.67	36.42	0.84	0.84	3.20	2.49	2.73	3.27	0.00	0.00	0.00	0.00	0.00	0.00	8.90	0.52
281.00	1783.00	1.83	37.26	0.86	0.84	3.33	2.49	2.85	3.27	0.00	0.00	0.00	0.00	0.00	0.00	8.86	0.52
300.00	2000.00	1.99	37.86	0.88	0.85	3.47	2.49	2.96	3.28	0.00	0.00	0.00	0.00	0.00	0.00	8.83	0.52

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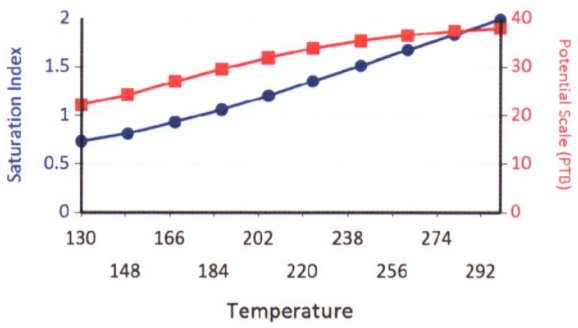
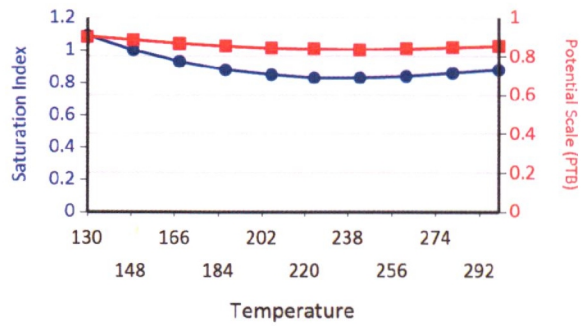
Water Analysis Report

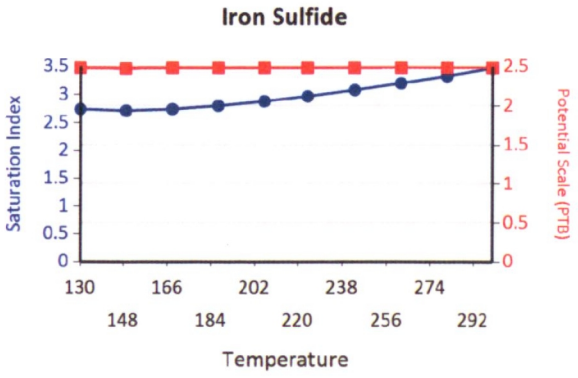
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.59	0.00	0.00	0.00	0.00	0.00	0.00	5.02	3.38
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.62	0.00	0.00	0.21	1.04	0.00	0.00	5.60	3.42
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.64	0.00	0.00	1.26	6.03	0.00	0.00	6.40	3.46
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.66	0.00	0.00	2.31	10.86	0.42	1.98	7.22	3.48
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	0.66	0.00	0.00	3.34	14.82	1.04	4.60	8.05	3.49
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	0.67	0.00	0.00	4.36	17.36	1.66	6.70	8.88	3.50
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.19	0.67	0.00	0.00	5.36	18.56	2.26	8.16	9.70	3.51
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	0.67	0.00	0.00	6.32	18.99	2.85	9.04	10.50	3.51
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.67	0.00	0.00	7.25	19.13	3.42	9.51	11.28	3.51
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	2.62	0.67	0.00	0.00	8.14	19.18	3.96	9.75	12.03	3.51

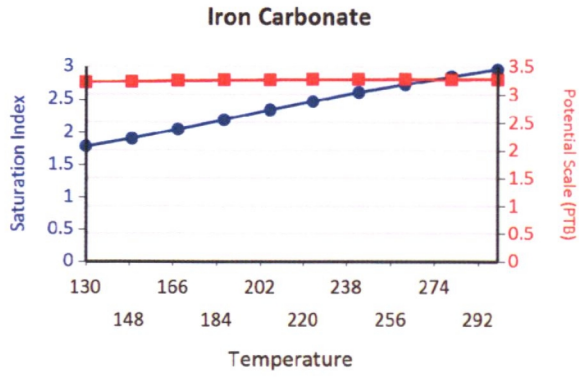
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

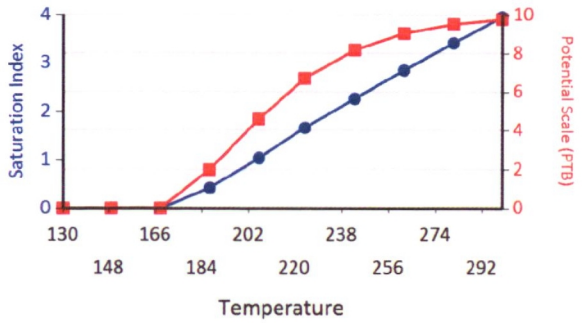




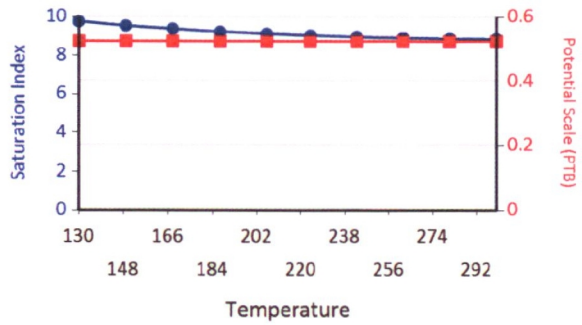




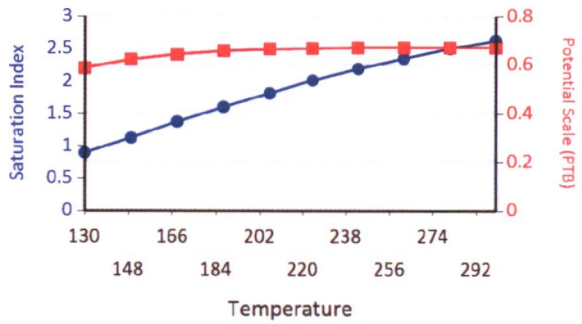
Ca Mg Silicate



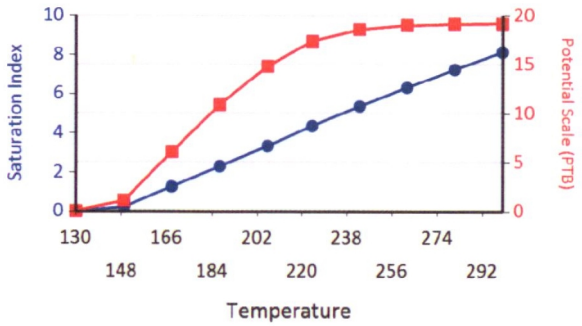
Zinc Sulfide



Zinc Carbonate



Mg Silicate



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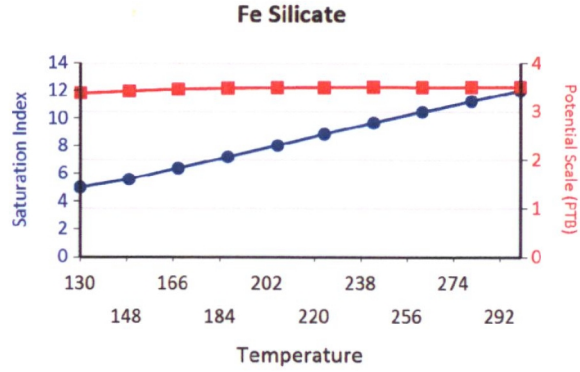
Water Analysis Report



PETROGLYPH EXECUTIVE OFFICES

June 1, 2017

Gary Wang or Don Breffle
Underground Injection Control Enforcement
U.S. Environmental Protection Agency
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: 5-year Mechanical Integrity Tests

Mr. Wang/ Mr. Breffle:

Please find enclosed 5-year Mechanical Integrity Tests for the following wells:

- Ute Tribal 04-01
- Ute Tribal 08-06
- Ute Tribal 16-16
- Ute Tribal 18-14
- Ute Tribal 28-11 UT20736-07120
- Ute Tribal 29-02
- Ute Tribal 29-08A
- Ute Tribal 29-10
- Ute Tribal 29-11
- Ute Tribal 29-15
- Ute Tribal 30-16
- Ute Tribal 33-16D3

U2 Entered
Date 6/14/17
Initial

Best Regards,

Nicole Colby
Manager, Land & Regulatory Compliance

TAB	GREEN	BLUE	CBI
		2	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 5/15/17

Test conducted by: CHAD STEVENSON

Others present: _____

Well Name: 28-11 Type: ER SWD Status: AC TA UC

Field: ANTELOPE CREEK

Location: 28-11 Sec: ___ T ___ N / S R ___ E / W County: DUCHESNE State: UT

Operator: PETROGLYPH ENERGY

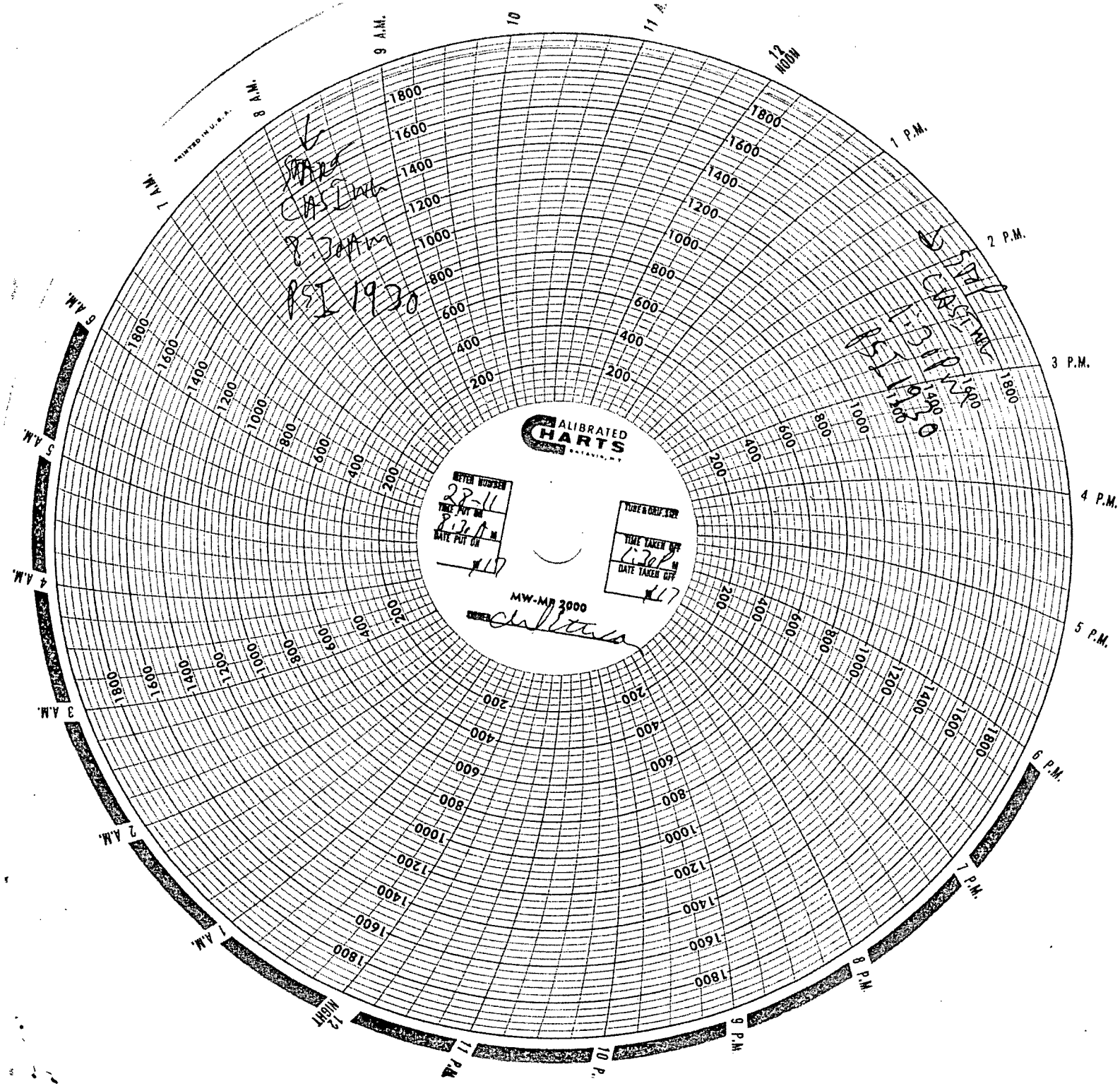
Last MIT: 1 1 Maximum Allowable Pressure: _____ PSIG

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 57 bpd
Pre-test annulus pressure: _____ psig

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	1689 psig	psig	psig
End of test pressure	1689 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	1931 psig	psig	psig
5 minutes	1930 psig	psig	psig
10 minutes	1930 psig	psig	psig
15 minutes	1930 psig	psig	psig
20 minutes	1930 psig	psig	psig
25 minutes	1931 psig	psig	psig
30 minutes	1931 psig	psig	psig
5 Hours minutes	1931 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ psig.


CALIBRATED
CHARTS
METER NUMBER
TIME PUT ON
DATE PUT ON
TUBE & ORIF. SIZE
TIME TAKEN OFF
DATE TAKEN OFF
MW-MR 2000
PRINTED IN U.S.A.
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
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5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10
11 A.M.

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

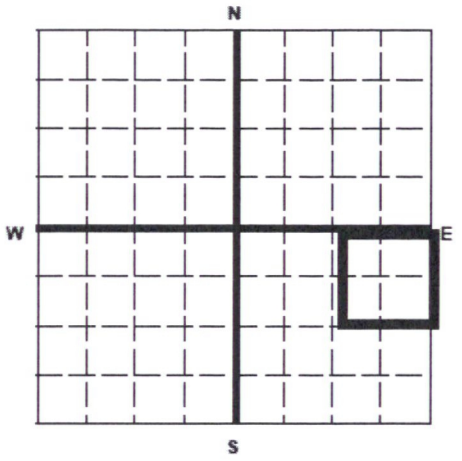
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 07120

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2171 ft. frm (N/S) S Line of quarter section
and 2107 ft. from (E/W) W Line of quarter section. U2 Entered

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Date 3/2/16
Initial BB

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1609	1670	1550		0	0
February	15	1664	1689	1591		0	0
March	15	1654	1708	1797		0	0
April	15	1638	1684	1670		0	0
May	15	1680	1683	1830		0	0
June	15	1680	1702	1779		0	0
July	15	1666	1695	1722		0	0
August	15	1508	1691	714		0	0
September	15	1653	1676	1256		0	0
October	15	1669	1671	1434		0	0
November	15	1655	1669	1336		0	0
December	15	1676	1686	1447		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

EPA Form 7520-11 (Rev. 12-11)

GREEN BLUE OBI
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 28-11 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327655**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/13/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0032
pH:	8.10
Calculated TDS (mg/L):	8475.04
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LangliерSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2716.19	Chloride (Cl):	3500.00
Potassium (K):	34.57	Sulfate (SO_4):	490.00
Magnesium (Mg):	66.52	Bicarbonate (HCO_3):	1464.00
Calcium (Ca):	160.42	Carbonate (CO_3):	
Strontium (Sr):	6.05	Acetic Acid (CH_3COO)	
Barium (Ba):	4.27	Propionic Acid (C_2H_5COO)	
Iron (Fe):	4.10	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.55	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.36	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.23	Silica (SiO_2):	26.78
Aluminum (Al):	0.23	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	5.08	Phosphates (PO_4):	87.63
Boron (B):	29.53	Oxygen (O_2):	
Silicon (Si):	12.52		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	1.99	121.46	1.40	2.44	0.00	0.00	2.57	2.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	1.88	114.84	1.42	2.45	0.00	0.00	2.44	2.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	1.80	110.03	1.45	2.45	0.00	0.00	2.33	2.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	1.72	104.96	1.49	2.46	0.00	0.00	2.23	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	1.65	99.77	1.54	2.47	0.00	0.00	2.12	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	1.58	94.56	1.60	2.48	0.00	0.00	2.02	2.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	1.52	89.46	1.68	2.49	0.00	0.00	1.91	2.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	1.47	84.59	1.77	2.50	0.00	0.00	1.81	2.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	1.42	80.04	1.87	2.51	0.00	0.00	1.70	2.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	1.37	75.89	2.00	2.52	0.00	0.00	1.60	2.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
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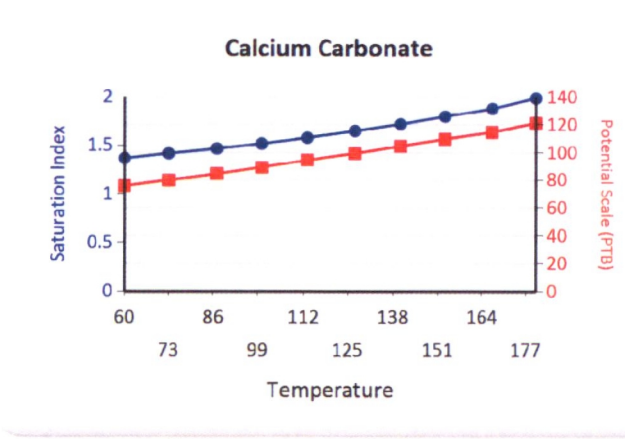
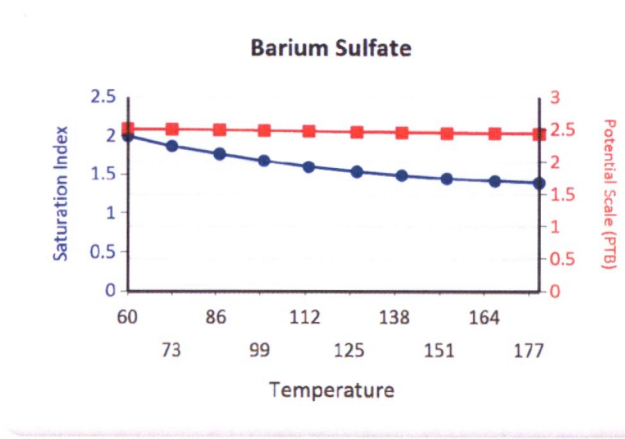
Water Analysis Report

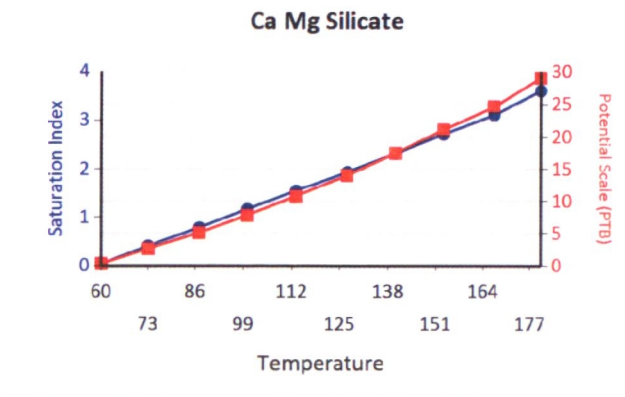
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	1.03	0.00	0.00	6.35	55.97	3.61	29.10	9.97	3.19
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.03	0.00	0.00	5.53	46.03	3.11	24.65	9.32	3.19
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73	1.02	0.00	0.00	4.86	38.54	2.72	21.14	8.82	3.18
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	1.01	0.00	0.00	4.19	31.27	2.33	17.55	8.32	3.18
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.00	0.00	0.00	3.51	24.55	1.94	14.07	7.84	3.18
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.97	0.00	0.00	2.84	18.56	1.55	10.82	7.36	3.17
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.93	0.00	0.00	2.16	13.31	1.17	7.85	6.89	3.17
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.86	0.00	0.00	1.48	8.70	0.79	5.16	6.44	3.15
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.73	0.00	0.00	0.80	4.58	0.41	2.68	5.99	3.14
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.51	0.00	0.00	0.12	0.77	0.04	0.35	5.56	3.12

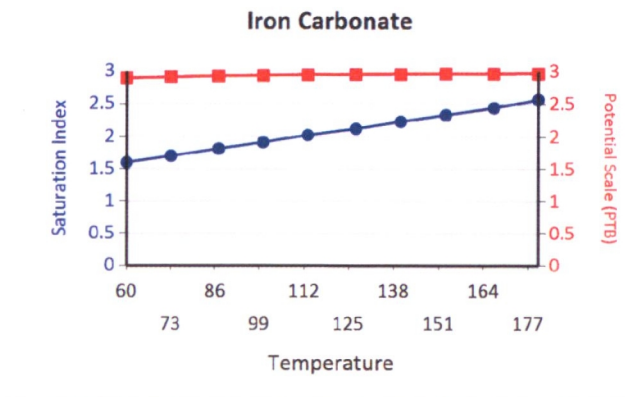
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
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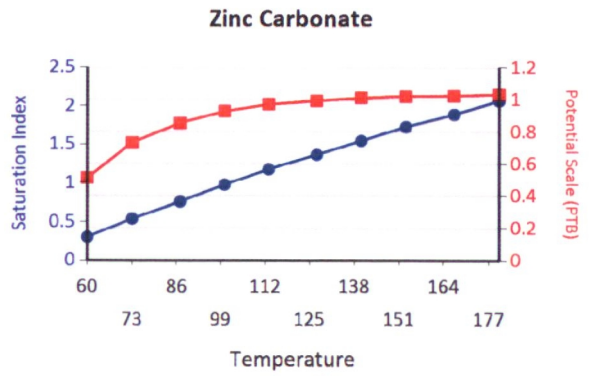
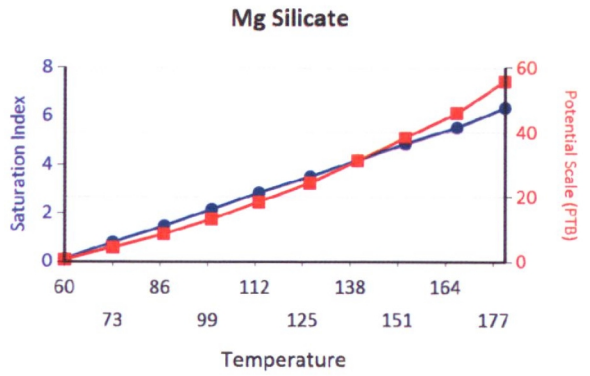
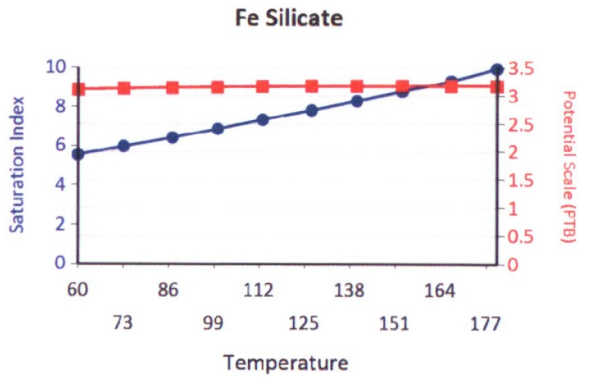
Water Analysis Report







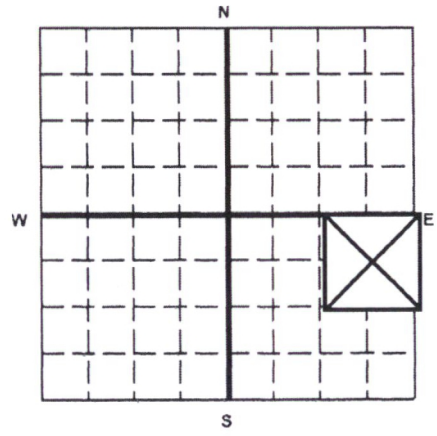
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

EPA ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07120

Surface Location Description

___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2171 ft. frm (N/S) S Line of quarter section and 2107 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1686	1698	2121		0	0
February	14	1694	1711	2028		0	0
March	14	1667	1685	2049		0	0
April	14	1687	1699	2053		0	0
May	14	1691	1694	2072		0	0
June	14	1677	1701	1935		0	0
July	14	1602	1688	1906		0	0
August	14	1672	1684	1983		0	0
September	14	1615	1666	1783		0	0
October	14	1675	1687	1967		0	0
November	14	1681	1685	1723		0	0
December	14	1657	1679	1673		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/3/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 28-11 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297528**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	0.9994
pH:	7.50
Calculated TDS (mg/L):	3156.20
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	16.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	628.24	Chloride (Cl):	1000.00
Potassium (K):	12.58	Sulfate (SO_4):	321.00
Magnesium (Mg):	62.96	Bicarbonate (HCO_3):	976.00
Calcium (Ca):	117.39	Carbonate (CO_3):	
Strontium (Sr):	4.53	Acetic Acid (CH_3COO)	
Barium (Ba):	2.42	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.50	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.62	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.07	Silica (SiO_2):	26.89

Notes:
B=1.68 Al=.03 Li=.38

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.92	56.10	1.91	1.42	2.46	1.37	1.11	1.67	0.00	0.00	0.00	0.00	0.00	0.00	10.48	0.84
88.00	157.00	0.87	52.72	1.82	1.42	2.32	1.37	1.09	1.66	0.00	0.00	0.00	0.00	0.00	0.00	10.23	0.84
97.00	300.00	0.90	54.66	1.75	1.42	2.29	1.37	1.15	1.68	0.00	0.00	0.00	0.00	0.00	0.00	10.10	0.84
106.00	443.00	0.94	56.73	1.68	1.41	2.26	1.37	1.22	1.70	0.00	0.00	0.00	0.00	0.00	0.00	9.97	0.84
115.00	585.00	0.98	58.90	1.61	1.41	2.25	1.37	1.28	1.72	0.00	0.00	0.00	0.00	0.00	0.00	9.85	0.84
124.00	728.00	1.02	61.16	1.56	1.40	2.24	1.37	1.34	1.73	0.00	0.00	0.00	0.00	0.00	0.00	9.74	0.84
133.00	871.00	1.06	63.47	1.50	1.40	2.23	1.37	1.41	1.74	0.00	0.00	0.00	0.00	0.00	0.00	9.64	0.84
142.00	1014.00	1.10	65.84	1.46	1.39	2.24	1.37	1.47	1.75	0.00	0.00	0.00	0.00	0.00	0.00	9.55	0.84
151.00	1157.00	1.15	68.23	1.42	1.39	2.25	1.37	1.54	1.76	0.00	0.00	0.00	0.00	0.00	0.00	9.47	0.84
160.00	1300.00	1.20	70.63	1.38	1.38	2.26	1.37	1.60	1.77	0.00	0.00	0.00	0.00	0.00	0.00	9.39	0.84

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.50	0.00	0.00	0.00	0.00	0.00	0.00	2.28	1.55
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.58	0.00	0.00	0.00	0.00	0.00	0.00	2.09	1.49
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.72	0.00	0.00	0.00	0.00	0.00	0.00	2.40	1.58
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.82	0.00	0.00	0.00	0.00	0.00	0.00	2.74	1.66
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.89	0.00	0.00	0.00	0.00	0.00	0.00	3.08	1.72
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.94	0.00	0.00	0.00	0.00	0.00	0.00	3.44	1.78
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.97	0.00	0.00	0.34	2.60	0.00	0.00	3.81	1.82
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	1.00	0.00	0.00	0.86	6.63	0.00	0.00	4.19	1.85
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	1.02	0.00	0.00	1.38	10.80	0.08	0.68	4.58	1.88
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	1.04	0.00	0.00	1.90	14.97	0.39	2.90	4.97	1.89

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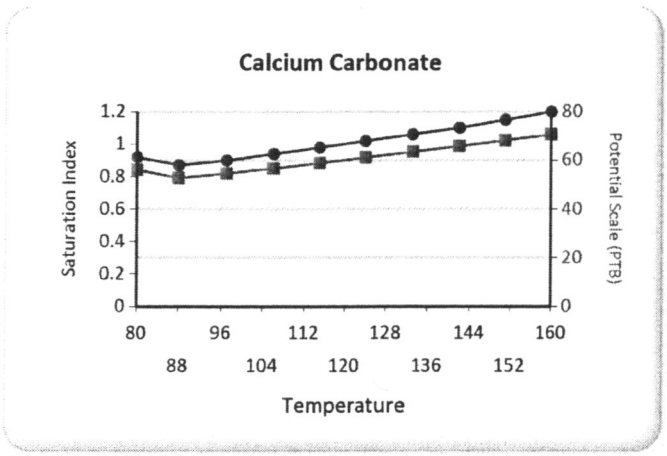
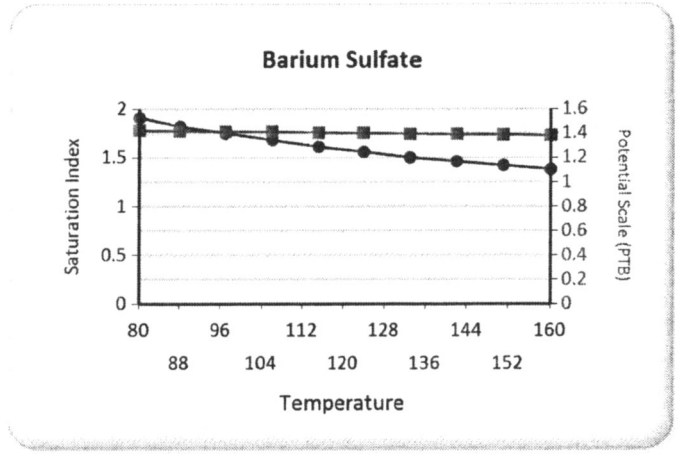
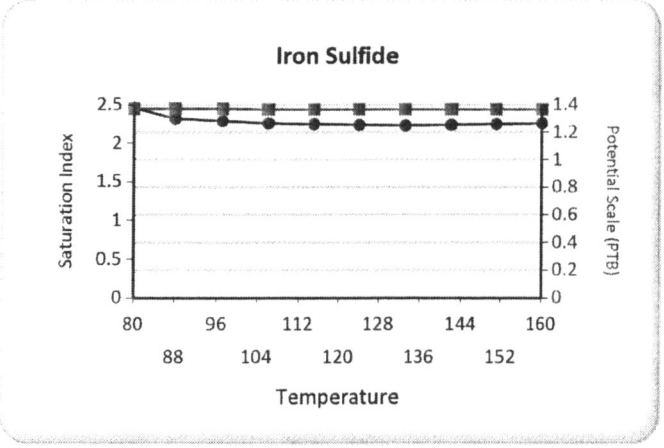
Water Analysis Report

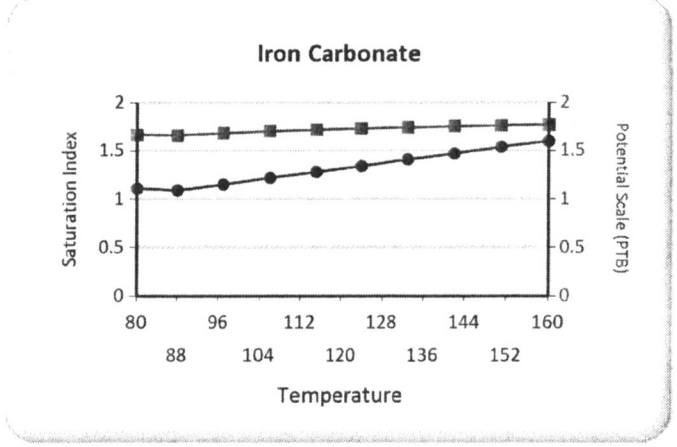
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Fe Silicate

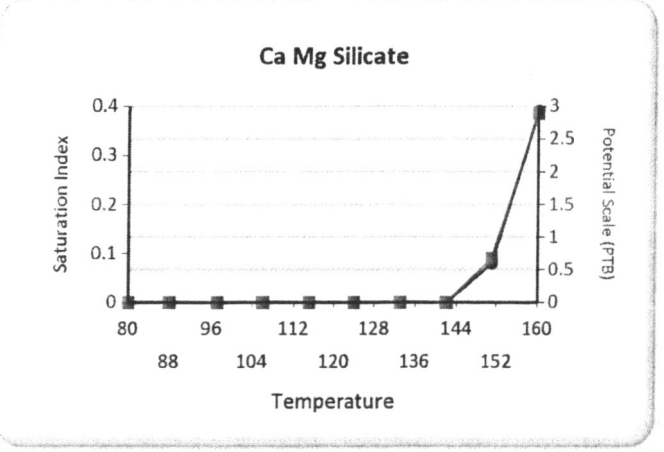
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

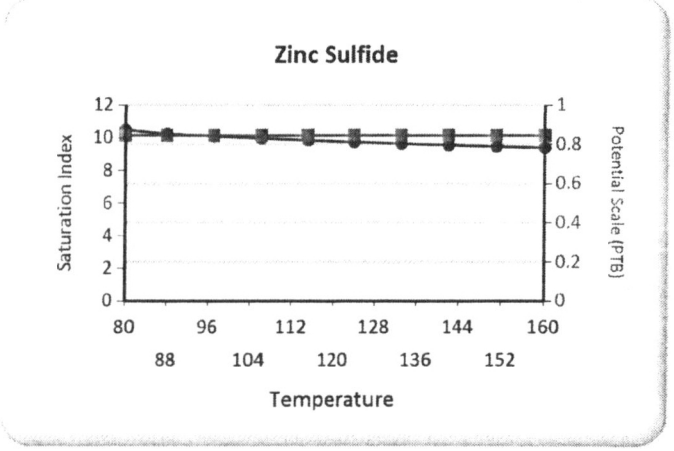












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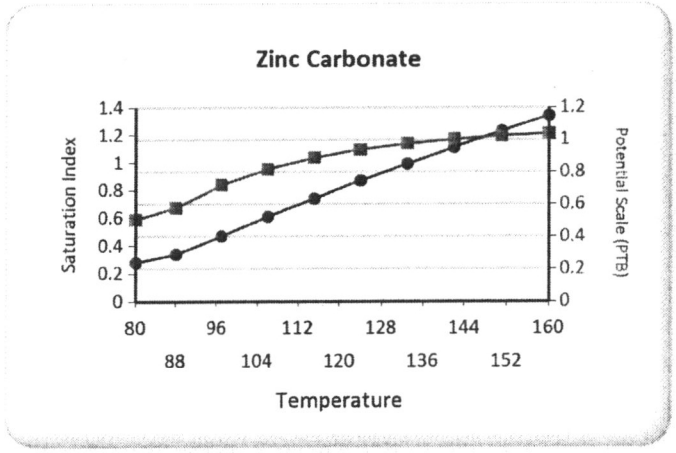
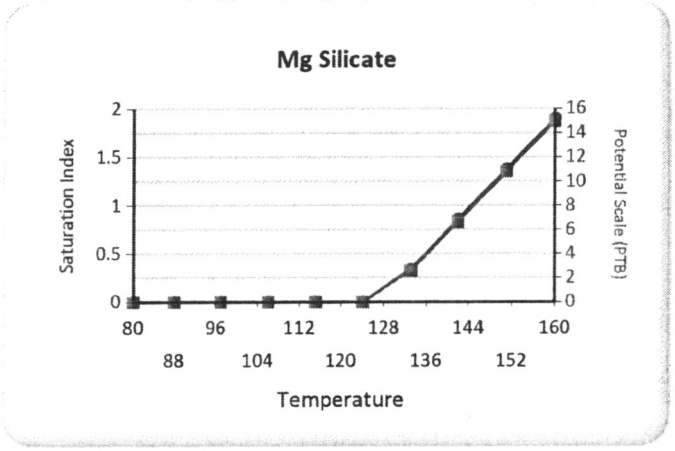
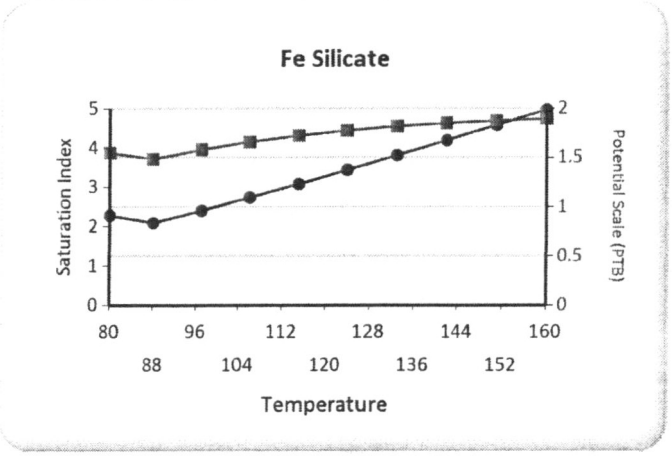






OMB No. 2040-0042 Approval Expires 12/31/2011

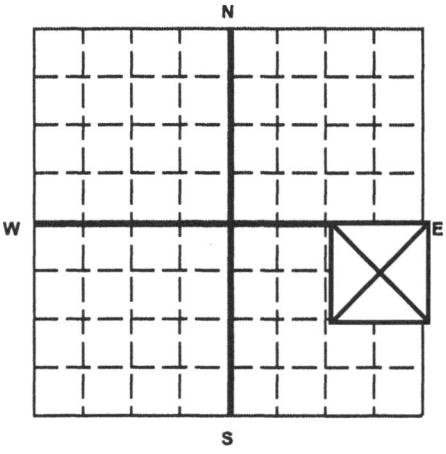
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07120

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SE 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2171 ft. frm (N/S) S Line of quarter section
and 2107 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1570	1631	2102		0	0
February	13	1658	1710	2252		0	0
March	13	1593	1682	2088		0	0
April	13	1650	1694	2125		0	0
May	13	1659	1696	2031		0	0
June	13	1616	1673	1621		0	0
July	13	1538	1625	1752		0	0
August	13	1645	1695	2131		0	0
September	13	1677	1718	1877		0	0
October	13	1660	1682	2157		0	0
November	13	1674	1684	2212		0	0
December	13	1653	1690	2244		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

TAB: GREEN | BLUE | CBI
2

~~Entered~~
Date 3/21/14
Initial BB

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 28-11 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262993**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.004
pH:	7.00
Calculated TDS (mg/L):	9829.05
CO2 in Gas (%):	
Dissolved CO2 (mg/L)):	0.00
H2S in Gas (%):	
H2S in Water (mg/L):	1.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3501.53	Chloride (Cl):	5000.00
Potassium (K):	57.00	Sulfate (SO_4):	371.00
Magnesium (Mg):	25.00	Bicarbonate (HCO_3):	732.00
Calcium (Ca):	57.00	Carbonate (CO_3):	
Strontium (Sr):	5.30	Acetic Acid (CH_3COO)	
Barium (Ba):	3.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	53.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.35	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.01	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.32	Silica (SiO_2):	23.54

Notes:
B=4.6 Al=.13 Li=.89

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	1.89	1.76	2.32	0.93	1.38	35.46	0.00	0.00	0.00	0.00	0.00	0.00	8.59	0.18
73.00	157.00	0.00	0.00	1.75	1.76	2.16	0.92	1.42	35.67	0.00	0.00	0.00	0.00	0.00	0.00	8.27	0.18
86.00	300.00	0.00	0.00	1.62	1.75	2.10	0.92	1.52	36.23	0.00	0.00	0.00	0.00	0.00	0.00	8.05	0.18
100.00	443.00	0.00	0.00	1.51	1.73	2.07	0.92	1.62	36.69	0.00	0.00	0.00	0.00	0.00	0.00	7.86	0.18
113.00	585.00	0.00	0.00	1.41	1.72	2.05	0.92	1.72	37.06	0.00	0.00	0.00	0.00	0.00	0.00	7.69	0.18
126.00	728.00	0.00	0.00	1.32	1.70	2.05	0.92	1.81	37.36	0.00	0.00	0.00	0.00	0.00	0.00	7.54	0.18
140.00	871.00	0.00	0.00	1.25	1.69	2.06	0.92	1.91	37.59	0.00	0.00	0.00	0.00	0.00	0.00	7.40	0.18
153.00	1014.00	0.06	2.97	1.19	1.67	2.08	0.92	2.01	37.78	0.00	0.00	0.00	0.00	0.00	0.00	7.29	0.18
166.00	1157.00	0.14	7.13	1.14	1.66	2.11	0.92	2.11	37.93	0.00	0.00	0.00	0.00	0.00	0.00	7.18	0.18
180.00	1300.00	0.22	11.34	1.10	1.64	2.16	0.92	2.20	38.05	0.00	0.00	0.00	0.00	0.00	0.00	7.09	0.18

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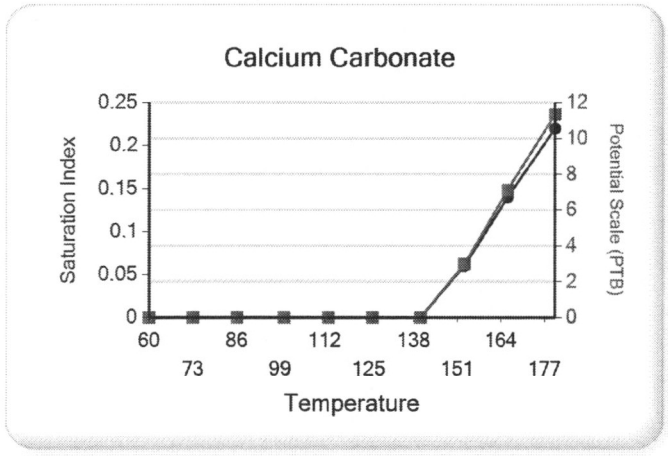
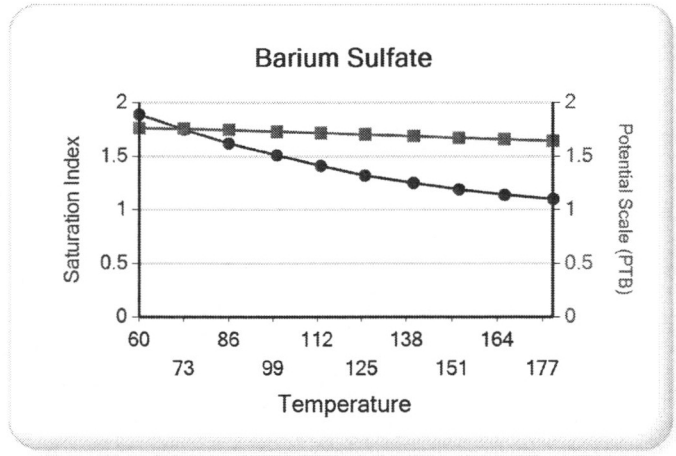
Water Analysis Report

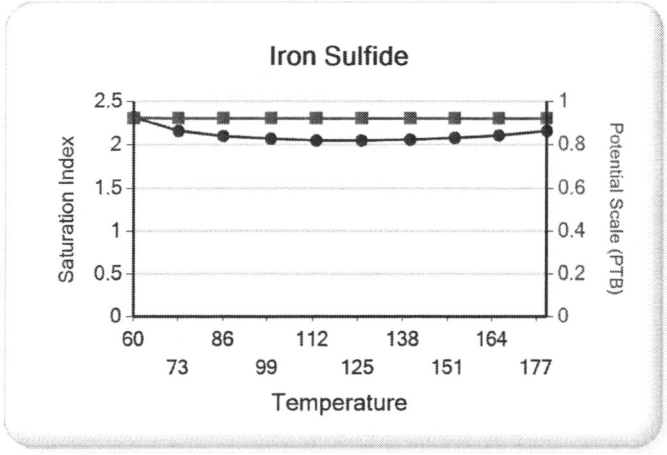
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.59	0.00	0.00	0.00	0.00	0.00	1.84	12.67
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.08	0.00	0.00	0.00	0.00	0.00	1.87	12.77
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.69	0.00	0.00	0.00	0.00	0.00	2.32	15.34
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.35	0.00	0.00	0.00	0.00	0.00	2.82	17.78
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.03	0.00	0.00	0.00	0.00	0.00	3.34	19.96
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.74	0.00	0.00	0.00	0.00	0.00	3.89	21.79
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.00	0.00	0.00	0.00	0.00	4.46	23.19
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.24	0.00	0.00	0.00	0.00	0.00	5.05	24.16
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.02	0.00	0.00	0.00	0.00	0.00	5.65	24.78
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	6.82	0.00	0.00	0.00	0.00	0.00	6.26	25.14

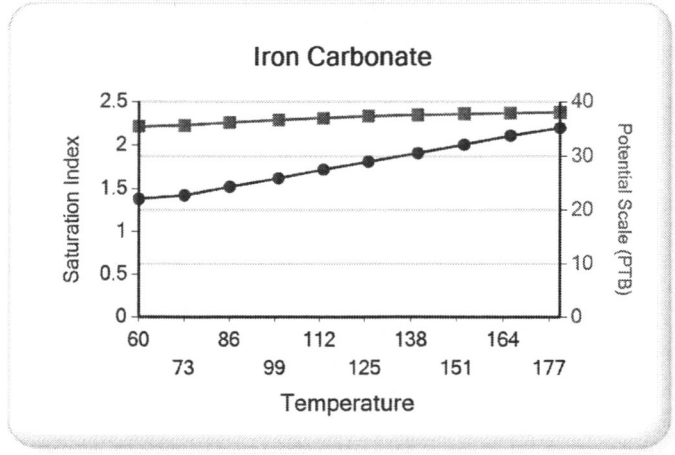
These scales have positive scaling potential under initial temperature and pressure: Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate









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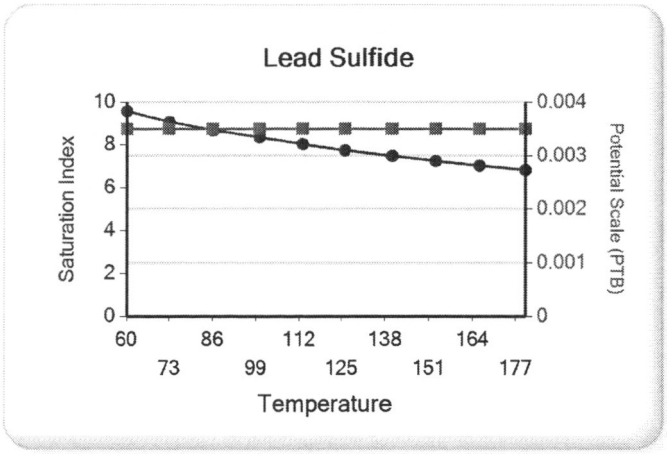
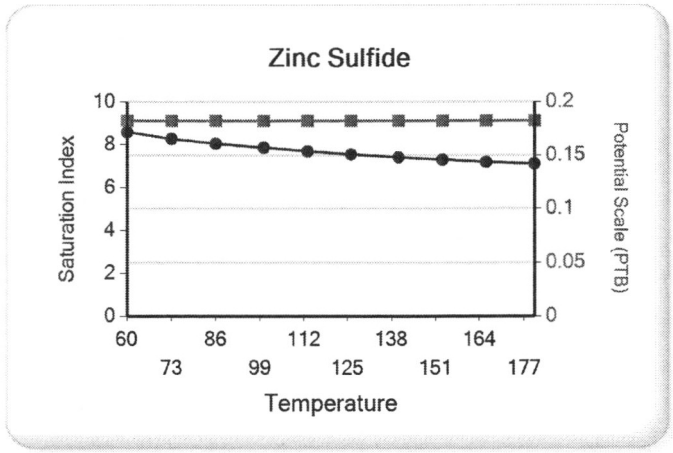
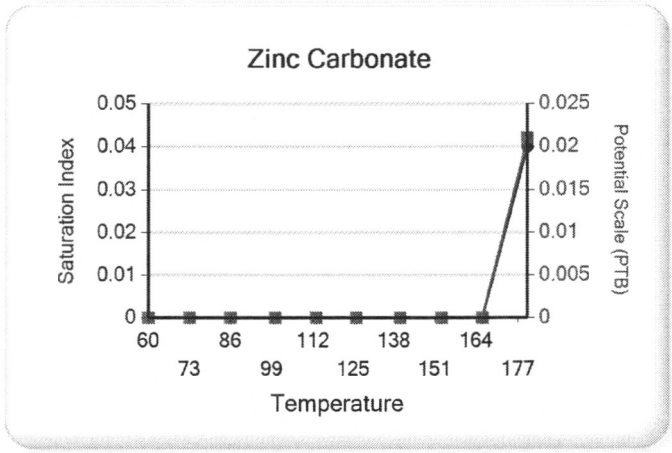
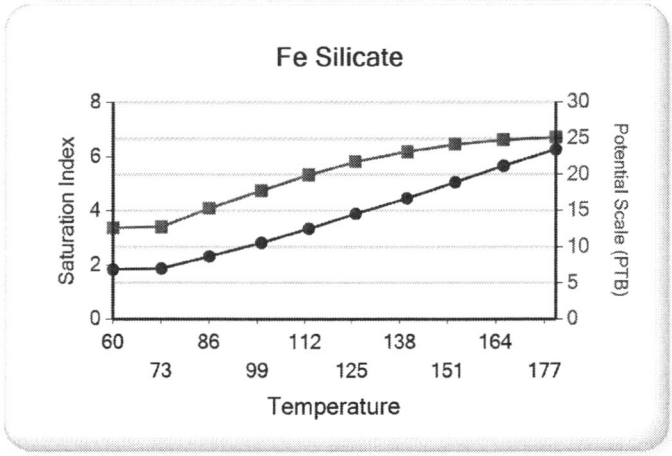
Water Analysis Report









UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On January 27, 2006, the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 28-11**
EPA Well ID Number:	**UT20736-07120**
Location:	2171 ft FSL & 2107 ft FWL Sec. 28 - T5S - R3W Duchesne County, Utah

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: APR 26 2007

for **Stephen S. Tuber**
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 28-11**
EPA Well ID Number: **UT20736-07120**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity Test (MIT);
2. pore pressure calculation of the proposed injection zone; and
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker, at approximately 3927 ft $(KB)_{CBL}$, to the top of the Basal Carbonate, at approximately 5919 ft $(KB)_{CBL}$.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1745 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.009 D = 4809 ft (top perforation depth KB)
MAIP = 1745 psig

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.***
Based on review of well construction and cementing records, including CBL, well construction is considered adequate to prevent fluid movement out of the injection zone and into USDWs.

Tubing and Packer: ***No Corrective Action is required.***
The 2-3/8" or similar size injection tubing is approved. The packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.***
The following wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal No. 28-11 were evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well: Ute Tribal No. 28-06 Location: SENW Sec. 28 - T5S - R3W

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cement bond log and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum, the following plugs are required:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation (located at 4809 ft (KB)) with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, between approximately 2714 ft (KB) to 2914 ft (KB).

PLUG NO. 3: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the top of the Green River, between approximately 1492 ft (KB) to 1692 ft (KB).

PLUG NO. 4: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the base of the USDW, between approximately 1120 ft (KB) to 1320 ft (KB).

PLUG NO. 5: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 261 ft (KB) (unless pre-existing backside cement precludes cement-squeezing this interval).

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing, from at least 236 ft (KB) to 286 ft (KB).

PLUG NO. 7: Set a cement plug on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 8: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227.8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Oil Spill and Chemical Release Reporting:
The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:
The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:
Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 28-11**
EPA Well ID: **UT20736-07120**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 1592 ft (KB). According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water may be found at approximately 374 ft below ground surface at this well location. Based on analysis of the submitted CBL the top of casing cement in this well is at approximately 2604 ft (KB).

Confining Zone: The Confining Zone at this location is approximately 205 ft of interbedded limestone and shale between the depths of 3722 ft to 3927 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 1992 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 3927 ft (KB) to the top of the Basal Carbonate Formation at 5919 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: The CBL shows more than 201 ft of 80% or greater bond across two (2) sections of the confining zone, at approximately 3722 ft (KB) to 3742 ft (KB) and 3746 ft (KB) to 3927 ft (KB).

Surface Casing: 8-5/8" casing is set at 261 ft (KB) in a 12-1/4" hole, using 150 sacks cement circulated to the surface

Longstring Casing: 5-1/2" casing is set at 5993 ft (KB) in a 7-7/8" 6012 ft (KB) total depth hole with plugged back total depth (PBTD) of 5948 ft (KB), cemented with 425 sacks cement

Top of Cement : 2604 ft $(KB)_{CBL}$

Perforations: Top: **4809 ft** (KB) Bottom : **5036 ft** (KB)

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for two wells in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well: Ute Tribal No. 28-06 Casing Cement top: 2434 ft $(KB)_{CBL}$

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

APR 2 6 2007

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Patti Cox ☐ Agent ☐ Addressee

B. Received by (Printed Name) Patti Cox

C. Date of Delivery 5-1-07

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

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MAY 07 2007
EPA Region 8
Ground Water Program

3. Service Type
☒ Certified Mail ☐ Express Mail
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Sent To Mr. Steve Wall
Street, Apt. No. or PO Box No. District Manager
City, State, ZIP+4 Petroglyph Energy, Inc
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

PS Form 3800, June 2002 See Reverse for Instructions

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

JUN 27 2007

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: Authorization to Inject
UIC Permit No. UT20736-00000
Well ID: UT20736-07120
Ute Tribal No. 28-11
Duchesne County, Utah

Dear Mr. Wall:

Thank you for submitting information pertaining to the newly constructed or converted Ute Tribal No. 28-11 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior To Commencing Injection" requirements for the Ute Tribal No. 28-11 injection well required well owner and operator Petroglyph Operating Company, Inc. to submit the following information to the Director:

I. A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
II. Pore pressure calculation of the proposed injection zone, and
III. Completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal No. 28-11 enhanced recovery injection well under the conditions of the Authorization for Additional Well and UIC Area Permit UT20736-00000 as modified.

As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC
U.S. EPA Region 8, Mail Code 8ENF-UFO
1595 Wynkoop Street
Denver, Colorado 80202-1129

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal No. 28-11 shall not exceed **1745** psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of Authorization for Additional Well UT20736-07120 and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Linda Bowling of my staff at (303) 312-6254. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, please contact Nathan Wiser of the UIC Technical Enforcement Program by calling (303) 312-6211.

Sincerely,

Steven J. Pratt, P.E., CAPM (inactive)
Director, Ground Water Program

cc:

Curtis Cesspooch, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe

Ronald Groves, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Irene Cuch, Vice-Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe

Steven Cesspooch, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Phillip Chimbraus, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Francis Poowegup, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe

Chester Mills, Superintendent
BIA - Uintah & Ouray Indian Agency

Mr. Kenneth Smith
Executive Vice President and Chief
Operating Officer
Petroglyph Energy, Inc.

Shawn Chapoose, Director
Land Use Department
Ute Indian Tribe

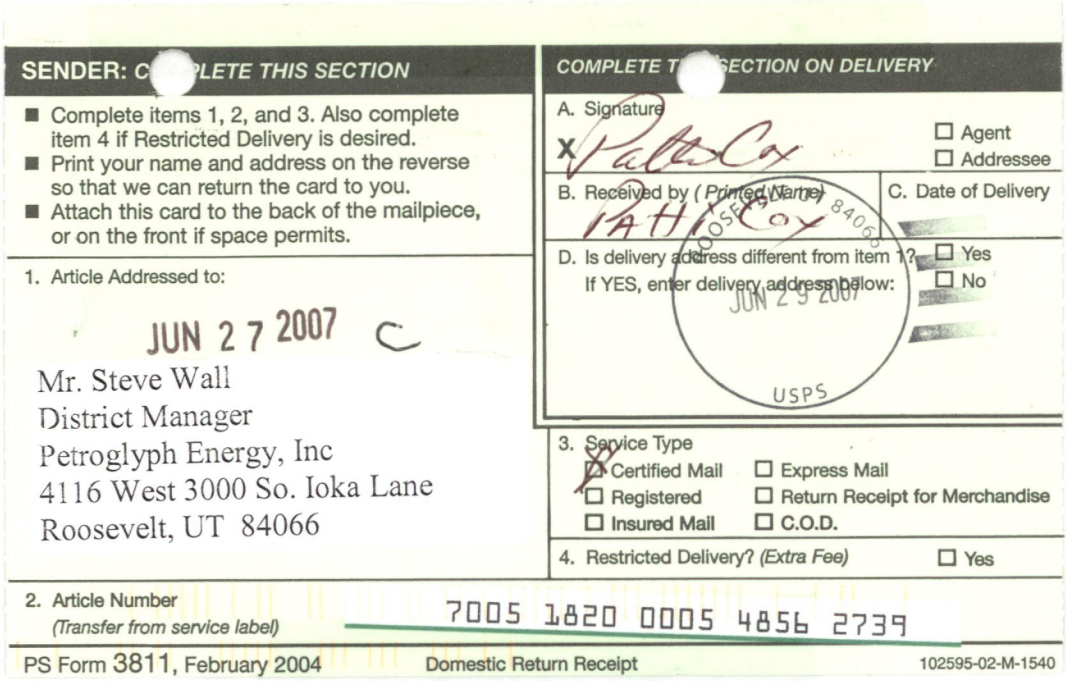
Gil Hunt
Technical Services Manager
Utah Division of Oil, Gas, and Mining

Fluid Minerals Engineering Office
BLM - Vernal Office

Lynn Becker, Director
Energy and Minerals Department
Ute Indian Tribe

bcc w/o enclosures:

Judy Hervig, 8TAP
Nathan Wiser, ENF-UFO



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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

JUN 27 2007

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Patti Cox
☐ Agent
☐ Addressee

B. Received by (Printed Name) PATTI COX
C. Date of Delivery

D. Is delivery address different from item 1?
If YES, enter delivery address below:
☐ Yes
☐ No

ROOSEVELT UT 84066
JUN 29 2007
USPS

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Street, Apt or PO Box District Manager
City, State, Petroglyph Energy, Inc
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

7005 1820 0005 4856 2739

PS Form 3800, June 2002 See Reverse for Instructions

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U.S. EPA (7116mr)
303-312-6741
2007-Jun-26 07:47 AM

Job	Date/Time	Type	Identification	Duration	Pages	Result
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